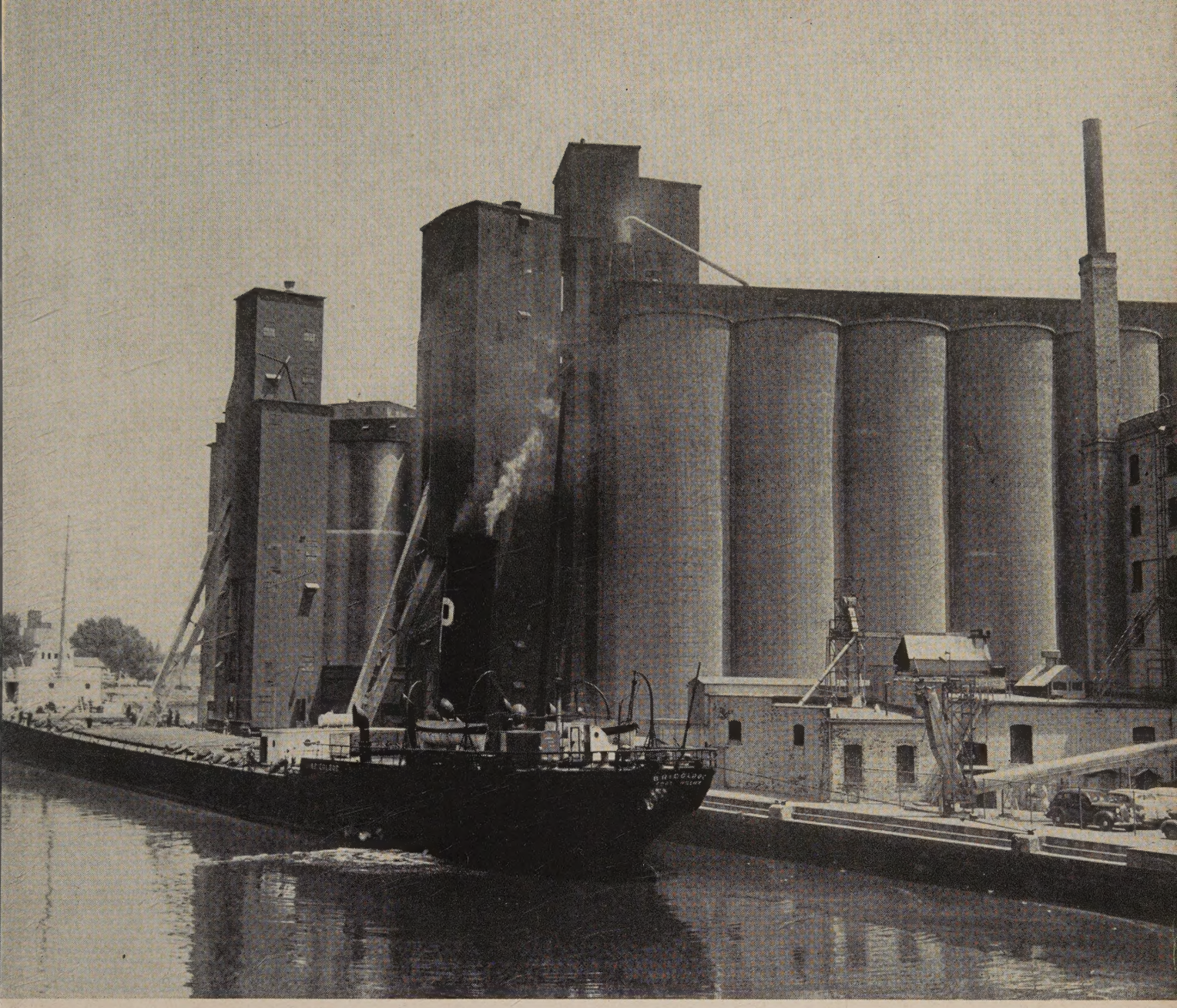


The cover of the last issue of GRAIN showed a lake steamship loading at Duluth, with grain going to Europe for relief needs. The picture above shows a Great Lakes steamer, heavily loaded, pulling in to an elevator at Buffalo, N.Y., for unloading. The grain will then be routed by rail or the Erie Canal to the Eastern Seaboard for foreign shipment.

GRAIN

JANUARY 1949

THE MAGAZINE OF PLANT MANAGEMENT AND OPERATION

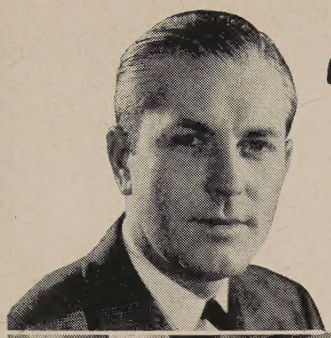
SELF ANALYSIS SAFETY QUIZ

Meditation on our personal shortcomings is said to be good for the soul. At least, any superintendent can gain a new outlook by a little inward searching of his own methods and attitudes toward his workers.

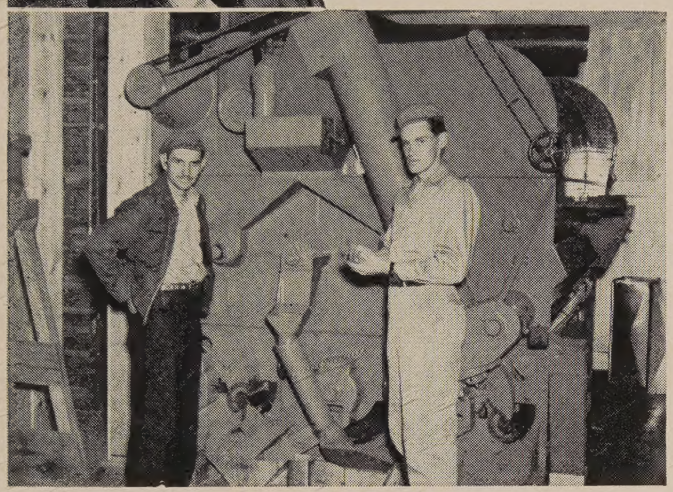
This check list is for you alone.

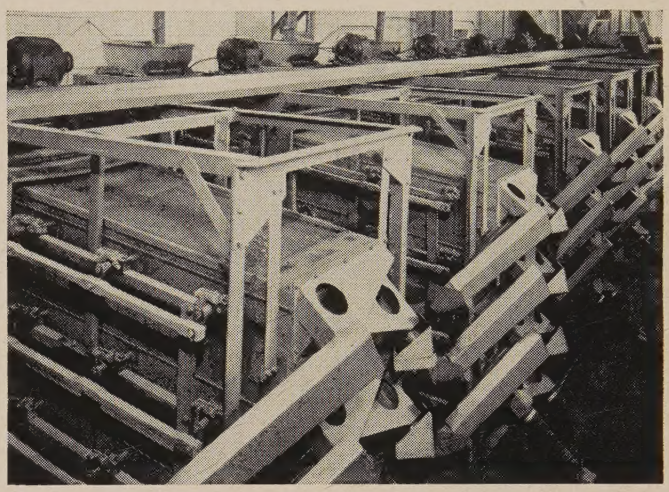
Give yourself a good going over.

	Yes	No
1. Do I practice what I preach about safety?		
2. Do I know all the hazards in my department?		
3. Do I inspect continuously for hazards?		
4. Do I permit unsafe shortcuts by workers?		
5. Do I check on their personal protection?		
6. Do I stop unsafe practices without delay?		
7. Do I criticize in friendly, helpful manner?		
8. Do I see that workers have proper tools?		
9. Do I make sure tools are in good condition?		
10. Do I insist on prompt first aid for injury?		
11. Do I encourage reports on unsafe conditions?		
12. Do I investigate accidents promptly, fully?		
13. Do I encourage housekeeping for safety?		
14. Do I encourage safety suggestions?		
15. Do I act promptly on all suggestions?		
16. Do I give proper credit for good suggestions?		
17. Do I help workers feel secure in their jobs?		
18. Do I commend good work whenever possible?		
19. Do I try to counsel worried employees?		
20. Am I considerate in handling grievances?		
21. Am I a good listener?		
22. Do I administer discipline fairly?		
23. Do I keep emotion out of job decisions?		
24. Do I prepare for opportunities ahead?		
25. Am I training others to take over my job?		
26. Do I consider my own health and safety?		



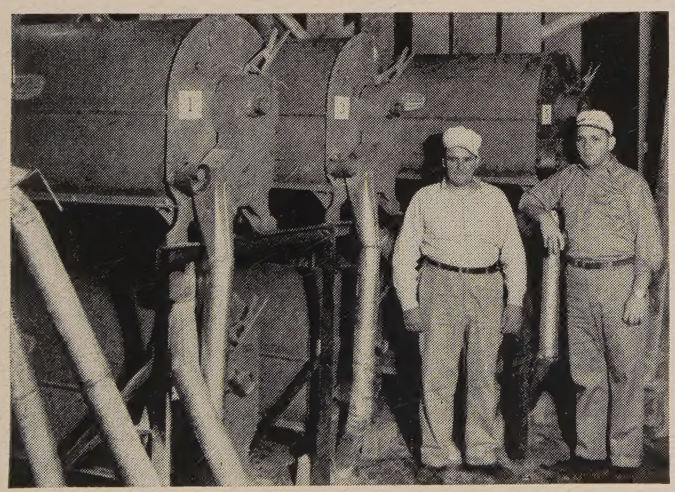
"Who bought SUPERIOR grain cleaning equipment during 1948?"

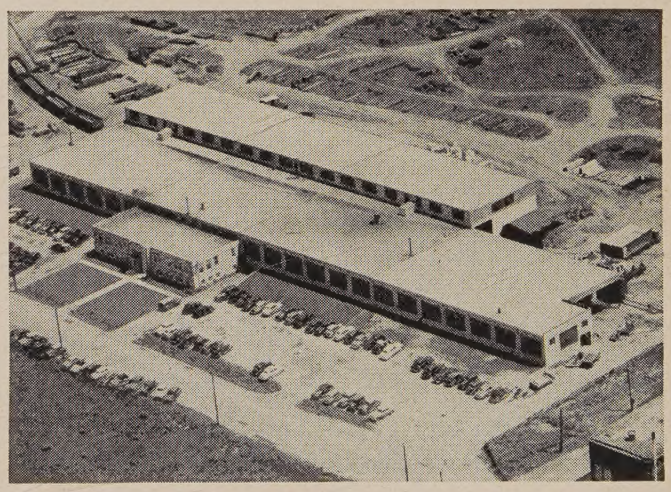




103 COUNTRY ELEVATORS, including the Elbow Lake Co-op. Grain Co. of Elbow Lake, Minnesota. Says Edgar R. Beyer, manager, "The prompt and efficient service we received on the installation of our new Country General 7 was excellent . . . one of the best to be found. We are proud of our machine, and know it will handle the tough cleaning jobs." Count on Superior for accuracy, dependability and real service!

85 HYBRID CORN PLANTS, including the world's largest, Garst and Thomas Hybrid Corn Co., Coon Rapids, Iowa. Says Leo A. Schneider, plant superintendent, "In order to secure increased capacity we recently conducted a series of grading machine tests on sizing, accuracy, grading rates, capacity and trouble free operations. After an analysis of these tests we selected Superior Rock-it Graders for our corn grading operations."





34 MILLS, including the National Oats Co. mill at Cedar Rapids, Iowa. A. S. Vermeersch, secretary, says, "The Superior C 56 Length Graders are doing an excellent job for us. In our business we have to have precise, accurate separations. Superior Machines give us this." Yes, Superior machines are tops for micro-accurate performance, operate at high speeds with remarkable precision through runs of millions of bushels.

209 TERMINAL ELEVATORS, Malt Houses, Feed Plants, Seed Houses, and other plants which have learned to trust Superior's 18 years of experience in producing fine machines for the cleaning, grading, scalping and aspirating of grains and seeds. Constant mechanical and design improvements keep Superior equipment ahead of the field. You know you can count on dependable, low-cost, long-life service when the name plate says, "Superior."

SEE SUPERIOR FIRST

- for micro-accuracy
- for high capacity
- for complete flexibility
- for dependable service

SUPERIOR SEPARATOR COMPANY

Hopkins Minnesota

"Grain"

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SOGES CHAPTER MEETING DATES

1st TUESDAY — Minnesota SOGES Chapter. Henry J. Anderson, Bunge Corp., Minneapolis, President; James Auld, Hales & Hunter Co., St. Louis Park, Secretary.

2nd TUESDAY — Omaha-Council Bluffs SOGES Chapter. John T. Goetzinger, Rosenbaum Bros., Omaha, President; W. S. Pool, Nebraska-Iowa Elevator, Omaha, Secretary.

2nd FRIDAY—Central States SOGES Chapter. M. M. Darling, Acme-Evans Co., Indianapolis, President; N. R. Adkins, Ralston Purina Co., Lafayette, Secretary.

3rd TUESDAY—Kansas City SOGES Chapter. Orin Kinman, Cargill, Inc., Kansas City, President; George D. Duncan, Standard Milling Co., Kansas City, Secretary.

3rd TUESDAY — Chicago SOGES Chapter. Edward Anderson, Norris Grain Co., Chicago President; Harry Hanson, Glidden Co., Chicago, Secretary.

3rd THURSDAY — Buffalo SOGES Chapter. Cornelius Halsted, General Mills, Inc., Buffalo, President; James Burns, Pillsbury Mills, Inc., Buffalo, Secretary.

SAFETY COLOR DYNAMICS

COLORS IN INDUSTRY

Stephen L. Halac, Safety Engineer
THE GLIDDEN COMPANY
Soya Products Division
Chicago, Illinois

IN THE PRESENTATION OF THIS ARTICLE, COLORS IN INDUSTRIAL SAFETY WILL INCLUDE THOSE COLORS THAT ARE OR CAN BE USED TO SIGNIFY, DESIGNATE, OR SYMBOLIZE DIFFERENT MATERIALS, LIQUIDS, GASES, AND SOLIDS THAT ARE ENCOUNTERED IN INDUSTRY. THE INTELLIGENT USE OF THESE COLORS WILL ENABLE PERSONS TO KNOW AT A GLANCE WHAT KIND OF A MATERIAL, LIQUID, OR GAS IS INVOLVED, AND THEY WILL KNOW ITS CHARACTERISTICS, WHETHER OR NOT IT IS DANGEROUS, AND THE NECESSARY PRECAUTIONS TO BE USED IN CONNECTION THEREWITH.

NO ATTEMPT WILL BE MADE TO COVER ANY OF THE MECHANICAL SAFETY FEATURES OF INDUSTRY, AS THIS IS DEFINITELY A SUBJECT OF ITS OWN.

COLORS OF FIRE PROTECTION DEVICES WILL INCLUDE SPRINKLER SYSTEMS, EXIT LIGHTS, FIRE ALARM BOXES, ETC. ALSO INCLUDED WILL BE SAFETY CANS FOR THE STORAGE OF FLAMMABLE LIQUIDS.

First, let us consider some of the history, background, and first uses of colors.

Color is an essential of life, and it would be very difficult to conceive of the drabness of existence If we did not have any different colors in this world. The appreciation of colors in nature or in the arts has increased with the development of civilization and has always been an inherent characteristic of the human race. Along with the pure artistic appreciation of colors has grown an extensive symbolical use of them. The original Americans, the Indians, made extensive use of colors symbolically on their totem poles and in the paints with which they decorated their bodies and faces. In the early days of the development of this country, scouts and woodsmen were able to tell from the color and the arrangement of an Indian's war paint, not only the tribe to which he belonged, but whether he was on a simple cattle-stealing expedition, whether he was on a scalping party, or whether he had set out with the grim determination of selling his life as dearly as possible. Probably the best known and the most familiar colors to us all are those of our country's flag. These colors — red, white, and blue — are the national American colors. They have been used in combination many times throughout the ages. Charles W. Stewart, Superintendent of Naval Records and Library of the United States Navy Department, traces their use back to the Ark of the Covenant within the Tabernacle, the curtains of which employed the colors blue, purple, and scarlet. "Red is for courage, zeal, fervency; white is for purity, cleanliness of life, and rectitude of conduct; blue is for loyalty, friendship, justice, and truth." Each of the other nations has its own individual flag, made up of various colors and combinations which are deeply significant and symbolic. Unquestionably, most of us got one of our first, lasting impressions of color when Santa Claus made his appearance in his familiar red and white suit.

Colors Have Meaning

From a more practical standpoint, colors are used in many different phases of our everyday life. The customary use of pink or of blue saves a proud parent from much questioning and explanation. It is hard to conceive how the automobile could ever have been so widely distributed and used without the familiar green, yellow, and red colors of a traffic light. Of course, it is quite true that red is the color that perplexes us most when questioned by a police officer.

Many people in industry probably do not stop to consider just how extensive and how valuable the use of colors has grown to be. The development has been quite gradual and has come to be taken for granted without any great amount of analysis. As a matter of fact, it is highly essential that those in industry should have a thorough understanding of these colors so that when the occasion arises, the situation can be understood and handled intelligently.

Fire Alarm

There are certain colors that are not directly connected with industry but indirectly are of utmost importance to all, not only in industry but in all walks of life. These are the colors associated with fire alarm boxes. A knowledge of these colors and the location of fire alarm boxes near your home and office or factory should be our civic duty.

Conspicuousness of fire alarm boxes is of prime importance, and consequently they get their well-deserved share of color. The box and at least a portion of the supporting pole or post should be painted a signal red, preferably with white stripes above and below the red. Silver striping is often used, and it works out quite well. A special-colored light should be pro-

vided at or near every box in closely-built sections to indicate its location at night. Purple, blue, or orange-colored lights are well adapted for this purpose — much more so than red or green. Since the advent of the traffic signal lights, which are red and green, the use of these two colors over fire alarm boxes would not be advisable and could easily lead to confusion.

Something that affects us more directly is the colors used for exits and private fire protection — private fire alarm boxes and designation of portable equipment being among the more important.

Exit Lights

We are all very well acquainted with the color so widely used for exit lights. We see these lights very frequently, especially in theaters, hotels, office buildings, factories and the like. How many of us know that green is the recommended color, rather than the familiar red-colored exit light? Green is prescribed for exit signs in conformity with the color scheme adopted for traffic signals and is recommended by the "Building Exits Code" of the National Fire Protection Association, except where another color is required by law or ordinance. The reasons for the general use of red instead of green may be due to the fact that red commands attention better than does green and also, as already mentioned, because it may be the color required by law or ordinance.

In factories, warehouses, department stores, and other similar buildings, the location of such fire protection equipment as axes, extinguishers, hose, sand pails, water buckets, etc., is designated by a red band around the post or on the wall where the equipment is placed. Signs and arrows are often painted on walls or are placed conspicuously, pointing out where these stations are and also the location of private fire alarm boxes. It is no doubt true that many of the employes, especially the older ones, know where this equipment is and could find it blindfolded. This is what we should all like to believe. On the other hand, there may be new employes on the premises at the time of a fire who would be greatly aided by the presence of such signs or markers.

Sprinkler Colors

While on the subject of fire protection equipment in buildings, let us consider the colors used for the classification of automatic sprinkler heads. If you have a sprinkler system in your building, there is no question but that it should receive great care and attention. You can consider each sprinkler head as both a watchman and fireman, on duty at all times and ready for action when called upon by the heat of a fire. Maintenance of these systems cannot be overemphasized. If it were not for the sprinkler system, there is little doubt that many concerns would not be in business today. Sprinkler heads of the solder type are manufactured to fuse at four different temperatures, because certain occupancies and locations necessitate higher than the ordinary degree heads. The ordinary head, rated at approximately 160 degrees Fahrenheit, is used far in the majority. It is not specifically colored, but has the brass or bronz appearance. Next we have the intermediate head, rated at 212 degrees, which is generally found under skylights and over low-pressure boilers. The frame of the head, and the frame only, is painted white. The 286-Degree, or hard head, used in dry rooms and the like, is colored blue. For such locations as bake ovens and other places where the temperature is far above normal, the extra-hard head is used, which is rated at 360 degrees and is painted red. It is important, therefore, that the person in whose care the sprinkler equipment is entrusted, be familiar with these colors and their meaning so that if any occupancy changes take place, he can see that the proper degree head is in the right place. Other colors are in use, especially for the non-solder type, but those already mentioned comprise by far the greatest majority.

Cans

We are all familiar with the color of cans containing gasoline, naphtha, benzine, and other highly flammable liquids. It is true that many persons actually believe that so long as the can is colored red, the danger is eliminated. This color signifies that there is a dangerous liquid contained within the can and that extreme care should be made of its use. When we see such a can, it commands our attention, so that we will investigate further and make sure that the can is of the approved safety type. Then we shall know if the liquid is properly kept.

Flammable Materials

Colors play a very important part in connection with the transportation and shipping of flammable liquids and materials through our cities and towns that introduce hazards which seriously endanger lives and property. All of these materials do not act in the same way, and, therefore, must be handled differently, according to the individual characteristics. It necessarily becomes of great importance to be able to recognize the different materials, so that the proper precautions may be taken in case of emergency. This has been made comparatively easy by the regulations of the Interstate Commerce Commission, which, for the purpose of safety in transportation, has divided these dangerous materials and arti-

cles into six classes and has given each one a distinctive label. These classes of labels are as follows:

1. Flammable Liquids (Red Label).

2. Flammable Solids (Yellow Label).

3. Oxidizing Materials (Yellow Label).

4. Corrosive Materials (White Label).

5. Compressed Gases (Green Label).

6. Poisonous Articles (Poison Gas, Poison, or Tear Gas Label) — (White Label with Red Lettering and Red Outline. Skull and Crossbones for Poisons).

Piping

Still another important use of colors which is also of immense value to those in industry is that for the classification of piping systems frequently encountered in buildings. It is essential that these colors and their meanings be thoroughly understood. The purpose of coloring piping and of having this color scheme standardized is to enable employes, as well as firemen, to recognize what is contained within the piping, so that when the occasion demands the situation may be properly handled. It is quite important that a person know whether he is dealing with a pipe containing ammonia or whether he is dealing with a pipe containing a safe material.

Piping systems in a plant should be classified into one of three groups or classifications, depending upon the nature of the material carried. The three main classes are as follows:

1. Fire protection material and equipment, including sprinkler systems.

2. Dangerous materials, including corrosive, flammable, explosive, and poisonous.

3. Safe materials, such as water, etc., so that a pipe may be broken into at any time, even when filled.

In some cases, two other classifications may be necessary:

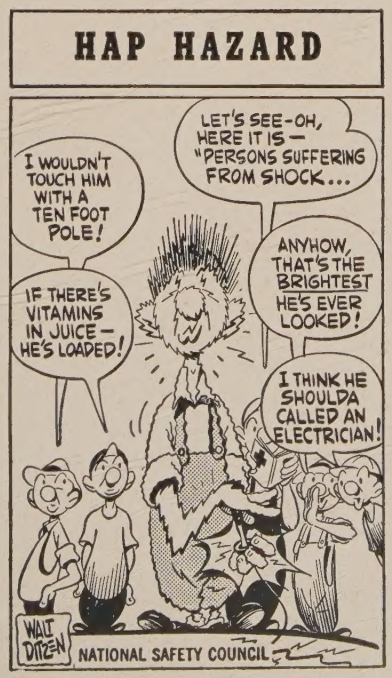
4. Protective materials — Those that eliminate or decrease the hazards of dangerous materials; for example, a plant may have protective gases or liquids which act as antidotes to poisonous or corrosive materials.

Classification	Color
F — Fire Protection Materials and Equipment	Red
D — Dangerous Materials	Yellow (or Orange)
S — Safe Materials	Green (or the achromatic colors: White, Gray, Black, or Aluminum)
P — Protective Materials	Bright Blue
V — Extra-Valuable Materials	Deep Purple

5. Extra-valuable materials—Most of these materials ordinarily could come under the safe classification, but where the value is unusually high, it is well to assign a special classification.

All piping in each classification should be painted a special color so that anyone can tell at a glance under which classification it belongs. The following table indicates the color that should be used for each classification, and also the designating symbols:

There are two methods of painting the piping: One is to apply the color over the entire length of the pipe, and the other is to paint color bands eight inches to ten inches wide near valves, fittings, and pumps and at repeated intervals along the pipe. Color-band painting is generally used when the management may wish to paint all pipes white or black or some other color (not a color specified for identification purposes) to prevent deterioration of the pipe, to decrease the cost, to increase the illumination, or for decorative purposes.



There are unusual classifications which might be encountered: for example, ammonia ordinarily would be classed as a dangerous material, but it might be used as a safe material for attaching phosgene fumes. Even under this condition, it should be classed as a dangerous material.

Where drinking or service water pipes are provided with special taps for fire protection purposes, the fire outlets only should be painted red and the remainder green.

Stenciling Legends

When it is desired to identify more specifically the material in a pipe, this can be done in either of two ways:

1. Preferably, by painting a stenciled legend on each pipe;

2. By the addition of one or more color stripes.

Stenciled legends should name the material; abbreviations may be used. Where it is important to know the direction of the flow, indicating arrows may be pointed on the pipe. Where color stripes are used for specific identification, each individual plant or industry as a unit can control its own selection of colors. For piping smaller than $\frac{3}{4}$ inch in diameter, enameled metal tags should be placed securely and in such a manner as to be easily read. Where stenciling is employed, the legend should be so located that it is entirely visible to workers on the regular floor level. Where the pipes are located overhead, the legend should be placed below the horizontal centerline of the pipe.

Gas masks are provided for our protection against the different

gases commonly encountered in industry. Again, colors are used to make it easier and quicker for us to select the proper type canister to be used.

These canisters have distinct colors each indicating the gases against which they afford protection. Some of the color combinations in use are:

Color	Protection Against
Yellow with Blue Stripe	Phosphine, Arsenic Trichloride
White	Bromine, Acetic Acid, Nitric Acid
Yellow with Black Stripe	Benzyl Chloride, Nitric Oxide, Phosgene
Black with White Stripe	Carbon Tetrachloride, Acetone, Propane
White with Green Stripe	Cyande, Hydrocyanic Acid
Yellow	Hydrogen Cyanide and Cyanogen, Chloride

The following contains a list of some common materials encountered, showing the physical characteristics and classification symbols:

F — Fire Protection ..... Red
D — Dangerous ..... Yellow
S — Safe ..... Green
P — Protective ..... Blue
V — Extra Valuable ..... Purple

Classification of Materials Carried in Pipes

Material Piped	Physical State Gas, Liquid, or Semi-Solid	Temperature of Material in Deg. Fahr. (Max.)	Pressure in Lb. per Sq. In. (Min.)	Classification
Ammonia	Liquid & Gas	−30 to 100	0 to 250 lb. per sq. in. gage	D
Acetylene Gas	Gas	0 to 200	½ in. to 250 lb.	D
Carbon Dioxide	Gas & Liquid	−30 to −100	0 to 250 lb. per sq. in. gage	D
Foamite	Liquid	Cold	Up to 100 lb.	F
Hydrogen	Gas	——	——	D
Lactic Acid	Liquid	Normal	60 lb.	V
Steam	Vapor	Below 212	Below atmos.	S
Steam	Vapor	212 to 800	Above atmos.	D
Water	Liquid	Cold	Any pressure	S

3-Dimension

Up to this point we have discussed the existing color codes which we have been familiar with for some time. Still another most unusual and very important use of colors has come to light recently through the submission of a proposed safety color code for industry to augment the "Three-Dimensional Seeing" program as organized by the E. I. DuPont Company.

First, a little bit about Three-Dimensional Seeing. This is a new science of combining color and light correctly, thereby providing a way of bettering industrial seeing conditions. It calls for painting machinery in colors that reflect light instead of absorbing light, thus better seeing conditions are provided because the usable light at the immediate working point is increased. When the bodies of machines are painted Gray and the working areas painted in a contrasting hue, Buff or Green, these danger points are "spotlighted" clearly.

Walls, ceilings and floors are also painted in colors that are high in reflection value, thus making the entire plant interior a huge lighting unit which "salvages waste light".

Specifically — "Three-Dimensional Seeing" steps up production by helping workers operate faster, more efficiently, more accurately. It reduces accidents by eliminating eyestrain, promoting easier, more comfortable seeing at the point of work. It boosts workers' morale,

by reducing monotony, fatigue and loafing at the job. Cheerful surroundings are a strong antidote for absenteeism. It brings about better housekeeping, a new pride in job and plant.

Color Codes

Six colors in the basic safety color code for industry in any plant are proposed and recommended as basic; namely, yellow, orange, green, red, blue, and white (black or gray). To each color has been assigned a recognizable symbol as applicable to industry, each color or its symbol can be used to indicate a distinct type of hazard or to distinguish some specific identification. In carrying out this code it is not intended that the recommended colors be substituted for adequate guarding, but that they be used as "spotlighting" to indicate hazards. Mechanical guarding and personal protective equipment should of course be provided to conform with insurance regulations and individual state requirements. The following standards are recommended for the proposed safety color code:

These Colors	Have These Names	And These Symbols for Identification
Yellow	High-Visibility Yellow	Three yellow stripes
Orange	Alert Orange	Orange triangle and down arrow
Green	Safety Green	Green cross
Red	Fire Protection Red	Red square
Blue	Precaution Blue	Blue circle
White	Traffic White (including gray and black)	White star

High-Visibility Yellow is applicable to trucking equipment, protruding parts, edges of loading platforms and pits, aisle markings around hazards, low beams, railings, stairway approaches, floor pan edges, floor elevation changes, conveyor parts at hazardous levels, chain hoist blocks, loading buckets, aisle obstructions, risers of off-standard steps, curbings, and dead ends.

Alert Orange is applied to: Interior surfaces of electrical switch boxes, fuse boxes, power boxes, and machinery guards; and exposed parts of pulleys, gears, cutting devices, and rollers.

Safety Green is used to identify: First Aid Rooms, stretchers, cabinets for gas masks, cabinets for respirators, cabinets for medicinal supplies, and safety showers.

Fire-Protection Red is used for fire protection equipment such as: extinguishers, fire hose, hose connections, hydrants, apparatus, fire doors, alarm stations, and fire blankets.

Precaution Blue. The railroad spot tag symbol should be used to identify equipment or apparatus which should not be used, moved or started, such as: ovens, vats, electrical controls, boilers, valves, compressors, vaults, kilns, dryers, tanks, and scaffolding.

Traffic White (Gray or Black) is to be applied on traffic controls, aisle markings, storage areas, corners, waste receptacles, floor areas immediately surrounding waste receptacles.

Piping Identification Color Code — Main Classifications:

Red — Fire Protection Equipment (Sprinkler Systems).

Yellow (or Orange) — Dangerous Materials (Acids, gases, steam 212° - 800°F, etc.).

Green (or White, Black, Gray, Aluminum)—Safe Materials (Drinkwater, brines, compressed air, steam below 212°F, etc.).

Bright Blue — Protective Materials.

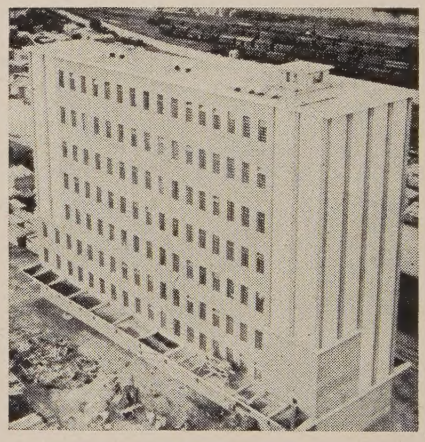
Deep Purple — Extra Valuable Materials.

Summary

We realize that each and every color and its use in industry has not been covered, but we hope that the general idea is implanted in your minds. It would be well if we gave this entire matter more thought and consideration; by doing so we shall be giving colors the attention they so justly deserve, and at the same time materially benefit ourselves. By some additional thought and study in this matter, you can become more aware and better versed along those lines.

Colors have a large place in the lives of all of us, whether we realize it or not, or whether we appreciate it or not, and they are of real importance in many phases of industry. The colors as mentioned in this paper are based on well accepted standards. Perhaps many of us have not realized the value of these colors and how they are being used for our protection and safety. The colors of the Interstate Commerce Commission labels are of real practical value in the quick identification of liquids and materials marketed under trade names that may not otherwise give any indication of the hazard involved. They are also of major assistance to the fire-fighter, for as soon as any of the hazardous labels are noted he can take proper precautions to avoid the spread of fire, injury, or even loss of life, which might readily result from the ignorance or disregard of the presence of such materials.

"Three-Dimensional Seeing" also is important in the safe guarding of life and limb as well as giving an instantaneous indication of just what cure can be used to eliminate a source of injury. If colors are studied and put to good use, they may be developed into very valuable aids in industry, as well as being a joy to the eye of an artist.



UNITED NATIONS' MILL OUTPOST

Flanked by built-in grain elevators with a capacity of nearly 2 million bu., this modern flour mill at the new free port of Trieste on the Adriatic Sea, is one of Europe's newest and largest grain processing plants. Nearly demolished by Allied bombers during World War II, the mill has been rebuilt with U. S. funds. In the 503-square mile Free Territory of Trieste 10,000 U. S. and British troops form the garrison. Despite Soviet Russia's 1947 protest, Trieste's 330,000 citizens—and the boundaries remain under protection of the United Nations. Marshall-plan grain and flour shipments are being relayed through the Trieste mill for Austrian as well as territorial destinations. Directly east of Trieste, lies Russia's satellite, Yugaslavia.

(American Miller & Processor)

WHEAT STOCKS LARGEST SINCE 1943

The department of agriculture reported that wheat stocks in this country January 1 totaled 857,046,000 bushels. This was .7% more than the 801,612,000 bushels on hand a year ago and the largest for any January 1 except for 1942 and 1943.

Disappearance of wheat in the last quarter of 1948 was reported at 291 million bushels, compared with 327 million bushels in the corresponding quarter of 1947.

The January 1 stocks included 381,667,000 bushels on farms, 3,701,000 bushels owned by the government, 166,348,000 bushels in terminal elevators, 103,248,000 bushels in merchant mills, and 202,083,000 bushels in interior mills, elevators and warehouses.

C.C.C. SURVEYS GULF LOADING

Approximately all terminal and sub-terminal elevators in the Southwest were in receipt of the following message from Woodrow R. Walton, Commodity Credit Corp. director:

"In order that we may more definitely gauge our ability to supply grain for our export and other programs, it will be appreciated if you will advise us by return mail the average number of cars you can load daily for our account and the total cars your elevator can load for all shippers, including C.C.C. We will also appreciate your advice as to the number of cars your loading track(s) will hold, and the number of daily switches your house receives. Your co-operation in this direction will be very much appreciated."

The C.C.C. with this information on hand will be in a better position to end unnecessary delays in loadings by elevators, once shipping instructions have been issued. C.C.C. will also be able to regulate instructions to individual elevators and to make possible a more even flow of grain to the gulf ports.

4-POINT PROGRAM SET FOR STORED WHEAT

A 4-point program in which major consideration will be given to perfection of wheat in storage was recently planned by the division of extension, Kansas State College, the Kansas Wheat Improvement Assn, and the state office of the Production and Marketing Administration. The representatives of the three groups met with R. I. Throckmorton, dean of the school of agriculture at the college and plans were made to improve the construction of country storage, methods of moving grain, and the control of insect pests that attack and destroy stored grain.

GRAIN CARLOADINGS

For the week ending January 8 there were 47,045 cars loaded with grain, and grain products a decrease of 4,837 cars below the same week last year and a decrease of 9147 cars below the same week in 1947.

ALF URGES PROGRAM TO DOUBLE BENEFITS OF SOCIAL SECURITY

The American Federation of Labor proposed formally that present social security benefits be doubled. It also offered a four point program for a vast widening of federal social insurance, along lines already called for by President Truman.

The AFL suggested the whole program, including disability and health insurance, could be financed this way: Employes would contribute 4 per cent of their wages (up to $4,800 a year). Employers would match this 4 per cent contribution, and a portion of the cost would be met from general government revenues.

The AFL said its program, prepared by a committee headed by Matthew Woll, is being sent to the White House and to congress.

The four points recommended in the AFL program are: Extend the present old-age and survivors insurance to 25,000,000 more persons. Start national sickness and disability insurance. Broaden the unemployment insurance program. Start a broad national health program.

Mr. Dean Clark, Secretary
Society of Grain Elevator Superintendents
327 South La Salle Street
Chicago 4, Illinois
Dear Mr. Clark:

It has been called to my attention that the Chicago Chapter of the Society of Grain Elevator Superintendents have scheduled a very fine and constructive trip to the Underwriters Laboratory January 19 to see, first hand, the rigid testing that is done in the interests of eliminating fire and explosion hazards in our properties.

It is of prime importance to me, and certainly to all management, to have our men as fully educated as possible on this topic as well as on related topics. It is also logical that manage- as well as all undertakings of the Society of ment's co-operation is essential in this undertaking Grain Elevator Superintendents to further the education of our men.

For my part let me say that our folks here at Hales & Hunter have been actively interested in the Superintendents Society's activities since its inception. My own son, Bill, served as a director tor last year, and another of our men is a director this year. We find attending every meeting pays us good dividends and we know everybody should find the same to be true.

It appeals to me that management can well afford to not only have their various interested employees join this association, but can also help its own interests by seeing to it that meetings are attended by their employees for the mutual benefit of all concerned.

Yours very truly,
Hales & Hunter Co., Chicago, Ill.
G. W. Hales

FREEDOM AND FREE MARKETS

Richard F. Uhlmann

Those who attack organized commodity exchanges should be happy they are living in one of the few countries of the world where free markets still exist. Those who attack organized exchanges do not do themselves credit. Judging by what has happened in Europe and elsewhere in the world, when free markets, whether in grain, stock, or other products, are no longer permitted, then the extinction of free elections cannot be far behind.

During the past year, we celebrated our one hundredth anniversary, which was an outstanding event in the history of our country and city and was a great testimonial to free markets everywhere. People came from all parts of this country and from Canada to pay tribute to a marketing system which had served many millions of people so faithfully since its inception.

A symposium was also inaugurated so that professors from 33 colleges and universities could come here to learn first hand the functions and accomplishments of the Chicago Board of Trade. It had been felt for some time that education was the only method to better acquaint the public that an exchange was not an individual to be loved, hated, feared, laughed at, or wept about. It is an inanimate thing, an institution, an apparatus, an auction establishment, a device, an arena, or a scoreboard. It plays precisely the role that a polling place, a voting booth, or a ballot box does in an election. One difference is that the votes or opinions thereon are made known instantly for nearly four hours a day, and about 1200 hours a year.

The public has been taught that a seismograph records earth tremors, a thermometer temperature, a barometer air pressure, and a Geiger counter radioactivity. These instruments measure physical facts, but the public does not yet recognize that as these instruments do measure physical facts, quotations on the great central grain exchanges measure opinions and do so just as accurately and efficiently.

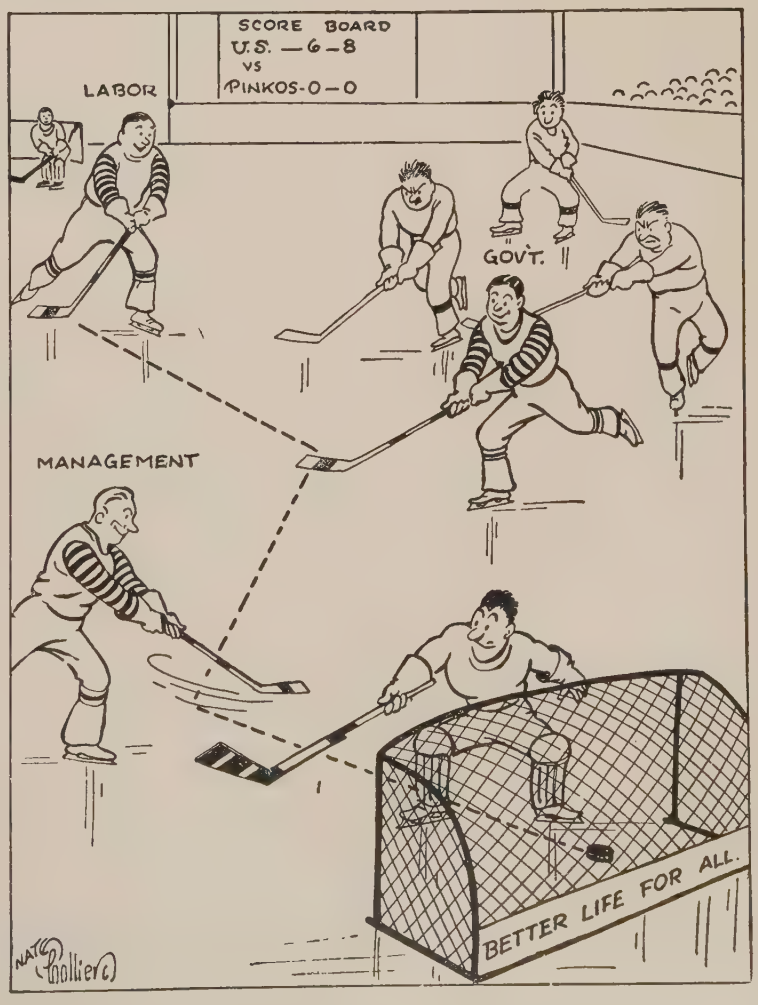
Looking ahead, the important question will be the handling of farm price supports. The preliminary estimate of the Department of Agriculture indicates an 8% increase in winter wheat acreage instead of a small decline which had been sought. There is a possibility of another banner yield for 1949. Even assuming some decline in export demand, we should derive benefits from surpluses because food costs have taken too large a share of the budget of the average family in recent years. Thus an adjustment in agricultural prices, which has been long overdue, should help rather than injure the economy up to a certain point.

As Americans citizens engaged in a most important and necessary industry, we should receive the helpful support and assistance of our government in trying to work out the best possible programs in behalf of farmers. It is because of the great faith I have in our people that I am led to believe that we shall finally have agricultural policies adopted in this country, which will not only be beneficial to the producer, but also practical to our entire economy.

TRADE REPRESENTATION ON INTERNATIONAL WHEAT COUNCIL

Six prominent leaders in the grain, milling and grain co-operative enterprises have been invited to act as an advisory body of the U. S. delegation on the International Wheat Council by Charles F. Brannan, secretary of agriculture. The list includes E. J. Grimes, vice-pres. of the Terminal Elevator Grain Merchants Ass'n, a member of the Northwest Shippers Advisory Board, past president of the Minneapolis Grain Exchange and

TEAMWORK **By COLLIER**



the Minneapolis Grain Exchange Clearing Ass'n, and vice-pres. of Cargill, Inc., Minneapolis; John L. Locke, Seattle, president of the Millers National Federation; Harold E. Sanford, Portland, Ore., chairman of the National Grain Trade Council; Michael F. Mulroy, Minneapolis, president of the Flour Millers Export Ass'n. Representing co-operatives are Merill Guild, Indiana grain co-operative leader, and Roy Hendrickson, Washington representative of farm grain co-operatives.

Farm organizations will be represented by Allen B. Kline, president of the American Farm Bureau Federation; James G. Patton, president of the National Farmers Union; Albert S. Goss, master of the National Grange; A. J. McFadon, president of the National Council of Farmer Co-operatives.

GOVERNMENT ELEVATORS

Following President Truman's message to Congress, grain interests in Chicago churned through the implications of the speech which asked for more storage space for the Commodity Credit Corporation.

Two statements were made, the first by Richard F. Uhlmann, president of the Chicago Board of Trade, and the other by George D. Bradley, regional chief of the C.C.C. in Chicago.

Mr. Uhlmann: *If such elevators are built, it is hoped that they will not compete with private trade. It would be extremely difficult to have government in the business of competing with its citizens.* Taking note of the President's endorsement of commodity price support loans, he stated: *If loans are too high, ownership of the grain finally goes to the government by default. Before the war the government kept building up its grain holdings until it owned 632 million bushels of wheat. Only the war and Lend-Lease saved it from taking heavy losses.*

Mr. Bradley: C.C.C. *can't make its loan and price support program effective without the authority to acquire storage facilities, but no thought has been given to the building of terminal storage space to compete with private elevators. Terminal storage should stay in the hands of private interests but present terminal and sub-terminal grain storage space, estimated at 1,300,000,000 bushels, is not adequate and should be supplemented with new construction, perhaps with the government doing the financing on a long term replacement basis.*

GRAIN EXPORTS SET RECORD

The department of agriculture reports that the United States exported 8,764,000 long tons, about 338,380,000 bushels, of grain and grain products in the last six months of 1948. The figure given is a record. A total of 8,485,000 long tons, about 328,335,000 bushels, was exported a year earlier.

Supplies of grain remain abundant and exports are expected to set a record in the current grain marketing year ending next July 1. In the last marketing year exports totaled about 585 million bushels, the largest amount ever shipped by any country in a 12 month period.

PRESIDENT RECOMMENDS $25,000,000 FOR GRAIN STORAGE

President Truman's budget message to Congress recommended an appropriation of $25,000,000 to build grain storage facilities. In addition the President requested that the charter of the CCC be amended to restore direct supervision over it to the Secretary of Agriculture. It included a recommendation for $56,000,000 to cover the first year of expenses in the event that the United States participates in a world wheat agreement.

PROPOSES GOVERNMENT ELEVATORS

Sen. Thomas (Okla.) has proposed a country-wide chain of elevators and warehouses to carry out the ever normal granary. Thomas heads the Senate Agriculture committee and so becomes one of the key men on farm legislation. He went on to explain that the government should have authority to provide ample elevator and warehouse storage for cotton, wheat, corn, and other so-called basic crops. If private industry does not supply them, Thomas said the government should.

"THE WHEAT STATE"

Automobiles and trucks licensed in the State of Kansas during 1949 will bear license plates with "The Wheat State" legend showing at the lower portion of the tag.

GRAIN TRADE TO AID IN STORAGE PLANS

Directors of the Terminal Elevator Grain Merchants Assn., at their recent meeting in Chicago, instructed their president, H. M. Stratton, to inform the department of agriculture of the association's willingness to co-operate with the government for additional storage facilities. The directors felt that the association's long experience and knowledge of the problem could contribute to a sound and satisfactory plan for additional storage capacity as may be required for government needs.

Charles F. Brannan, Secretary of Agriculture, responded to Mr. Stratton's message promptly by saying, "that the department will be very glad to meet with the terminal elevator group to discuss the subject of their communication." No date has been set for the meeting but the association's committee is prepared to go to Washington immediately.

ALLOCATE STEEL FOR GRAIN BINS

Allocation of steel sufficient to manufacture farm type storage bins capable of storing 100,000,000 bus. of grain has been approved by the government. The entire allocation of some 50,000 tons of steel approved at a government-steel industry meeting will be channeled directly to bin manufacturers who will sell their products directly to farmers. Officials estimate that the bins will hold 1,500 to 2,500 bus. each.

The CCC storage program if it goes through, will steer clear of terminal facilities according to officials, and the added storage will be spotted through the grain belt, primarily in corn country, as a supplement to privately operated country elevators and subterminals.

C.C.C. PURCHASES

Cumulative purchases of grain by Commodity Credit Corporation since July 1, 1948, were as follows:

Wheat, 203,094,269 bu.; flour, 1,189,790,000 lbs. (26,123,956 bu. wheat equiv.); barley, 14,448,857 bu. (revised); grain sorghums, 10,605,040 bu.; rye, 2,903,269 bu.; oats, 4,432,700 bu.; corn, 44,994,390 bu.

ACCIDENTS COST MONEY

The average cost to employers for lacerations, punctures and burns suffered by workers in industrial accidents is $39.04 a case, the national safety magazine Occupational Hazards reported.

SEVERED CORD IGNITES BLAST

Cleaning out a 20-foot boot recently, a worker in a Kansas elevator nearly lost his life when the electric extension cord he was using to provide light in the pit became tangled in the leg and one of the buckets sheared it in two.

The sparks from the cord ignited the suspended dust in the boot and leg and a dust explosion and fire followed, but fortunately for the workman the impact of the blast was upwards.

Reprinted from "GRA

Just like a ...DENT

Concrete, like teeth, **MUST** be inspected and attended to regularly! Cavities **MUST** be painstakingl only a technician's skill, **rebuilt** with an expert eye towards permanent strength, and, finally, **fill** protective material; . . . bridge-work must be put in wherever and whenever necessary—**and th the cheaper it will be.**

Nature is constantly **tearing down** and so both concrete and teeth must be restored as **quickly** knows how—for once deterioration has started it increases rapidly and restoration costs jump a may even reach the point where either is beyond reclaiming.

Did you ever stop to think just why you go to a dentist to have your teeth fixed? . . . "Sure" an expert and has the necessary tools, equipment and experience with which to do a first-class stop to realize what would happen if you did not go to an expert to have your concrete repa

We have had nearly thirty years' experience exclusively in the restoration and care of concrete a are busily engaged in this specialized work the year 'round. By having the proper tools and e of experience we are enabled to give you the b expense. If you entrust your problem to us satisfactory results and the most for your mor

Our work is NOT cheap,—but it IS lasting. The reason is the skilled man-hours involved and the quantity and quality of our materials is greater and costlier and more satisfactory. The best is the cheapest in the long run!

Protect your property investment as you would h your teeth from further decay—**the best way!**

Do it NOW—it's NOT TOO

No obligation for an estimate. Ju

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IST!

repared, **cleaned** with
with a truly lasting
sooner the better and

d as **well** as science
up—and eventually,

u say, "because he's
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our skilled mechanics
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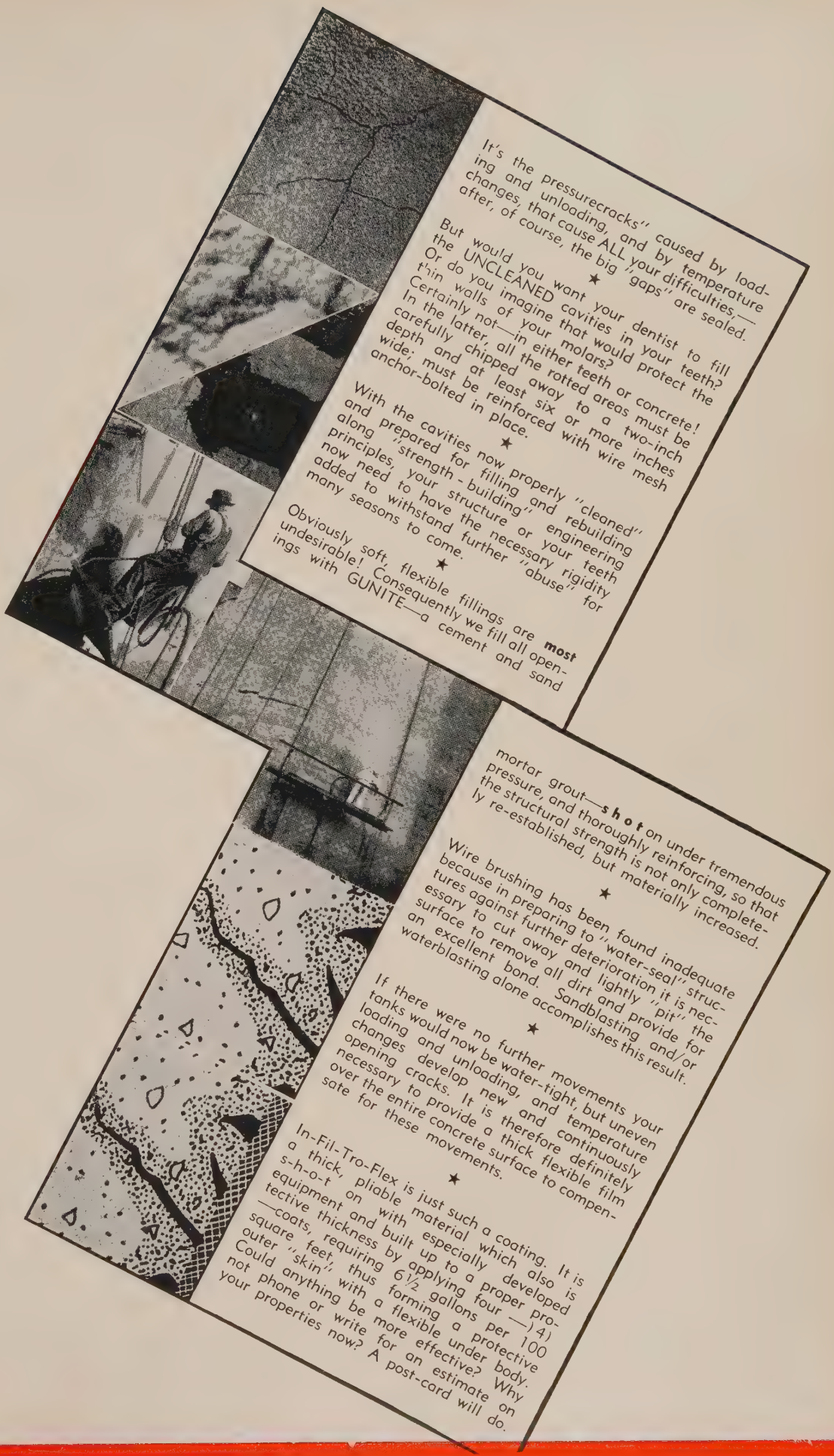
Call in



It's the pressurecracks" caused by loading and unloading, and by temperature changes, that cause ALL your difficulties,—after, of course, the big "gaps" are sealed.

★

But would you want your dentist to fill the UNCLEANED cavities in your teeth? Or do you imagine that would protect the thin walls of your molars? Certainly not—in either teeth or concrete! In the latter, all the rotted areas must be carefully chipped away to a two-inch depth and at least six or more inches wide: must be reinforced with wire mesh anchor-bolted in place.

★

With the cavities now properly "cleaned" and prepared for filling and rebuilding along "strength-building" engineering principles, your structure or your teeth now need to have the necessary rigidity added to withstand further "abuse" for many seasons to come.

★

Obviously soft, flexible fillings are **most** undesirable! Consequently we fill all openings with GUNITE—a cement and sand mortar grout—**shot** on under tremendous pressure, and thoroughly reinforcing, so that the structural strength is not only completely re-established, but materially increased.

★

Wire brushing has been found inadequate because in preparing to "water-seal" structures against further deterioration it is necessary to cut away and lightly "pit" the surface to remove all dirt and provide for an excellent bond. Sandblasting and/or waterblasting alone accomplishes this result.

★

If there were no further movements your tanks would now be water-tight, but uneven loading and unloading, and temperature changes develop new and continuously opening cracks. It is therefore definitely necessary to provide a thick flexible film over the entire concrete surface to compensate for these movements.

★

In-Fil-Tro-Flex is just such a coating. It is a thick, pliable material which also is s-h-o-t on with especially developed equipment and built up to a proper protective thickness by applying four (—)4) coats, requiring 6½ gallons per 100 square feet, thus forming a protective outer "skin" with a flexible under body. Could anything be more effective? Why not phone or write for an estimate on your properties now? A post-card will do.

BRANCH OFFICES: 1100 Baltimore Life Building, Baltimore 1, Maryland—827 N. W. 31st Street, Oklahoma City, Oklahoma.
AUTHORIZED AGENTS: Mr. H. W. Webb-Peploe, 409 Monmouth Road, West Long Branch, New Jersey—Pioneer Sand and Gravel Company, Inc., 901 Fairview Avenue, North, Seattle 11, Washington — Northland Machinery Supply Co., Ltd., 203 Hardisty Street, Fort William, Ontario, Canada—Northland Machinery Supply Co., Ltd., Winnipeg, Manitoba, Canada—Toronto, Canada.

Research for Canadian Storage

PROBLEM ANSWERS

DR. BEVERLY N. SMALLMAN
Science Service Branch
Dominion Dept. of Agriculture
Winnipeg, Canada

One of the problems during the war years was concerned with the control of insects in warehouses.

Two years ago we undertook an investigation of this problem and as a result of our two years' work we were able last spring to make definite recommendations to the grain, milling and feed industries on the most efficient methods of controlling insect pests in food and flour warehouses. In order to put our recommendations before those who are confronted with the problem we made a film in color on these infestations.

I know that many of you are actually concerned with storage in sack warehouses as opposed to elevator storage. Many of you are concerned with mills and other types of food processing plants—and to those men warehouse problems are of direct interest.

I've been asked questions regarding DDT and other insecticides. You will find some of the answers to those questions here. In fact, I think you will find something of interest in this story for the search for the weakspot in the armor of our ancient enemy—the insect.

This story concerns an insect that grows from obscurity to prominence in a few years and whose elimination appears to be imminent.

The Enemy

Insects cause no particular damage and might have escaped the attention of the entomologists if it were not for one single bad habit.

The insect is known as Aspirderdes and while all I will say will be on this insect, yet the control measures which we have developed will apply to many other cereal pests.

This insect infests cereals and cereal products. During the period of emergency grain storage in Western Canada it actually attacked grain and the surfaces of temporary storage bins, and for a time we were very much concerned about it as it does extreme physical damage very similar to that caused by the grain weevil.

It eats out the endosperm portion of the grain. We experimented and learned that it is capable of attacking only the surface layers of the grain and does not penetrate far enough to do any real damage. Moreover it multiplies at a very slow rate, and we were therefore able to write it off as a serious grain pest.

Warehouse Problem

In warehouses, however, it is a very different proposition. The pest is supposed to have entered into Canada some 25 years ago, but just how it entered and where is rather obscure. It came to light of importance about 15 years ago. Since then efforts have been made by government entomologists and the industry to eliminate it. Important letters by important people were written to the government to enlist aid in removing this pest.

About two years ago the stored products division, of which I am in charge, was asked to undertake investigation for its control. We had the advantage of having the new bugbusters which were developed during the war. With these weapons we challenged this pest to a test match, you might say, in the province of Manitoba. As a result of our two years' work we have been able to stand undefeated in that skirmish.

Having demonstrated the Aspirderdes could be defeated, it was our next step to advise those having a full scale battle in Western Canada of the technique we had used, and it was for this purpose that we made films.

There are some 7,000 flour warehouses in Western Canada. They are associated for the most part with the country grain elevators. The Aspirderdes almost exclusively is in those 7,000 warehouses—an extremely narrow habitat. These warehouses, usually of wood construction, are used for storing and as distribution points for flour and feedstuffs.

Insects Hibernate in Wood, Dust

These warehouses are quite unheated, and it follows that these insects would not be successful if it was extremely cold in winter because the temperature goes to 60 below. What appeared to happen is this—the beetles over winter, probably at larvae (wormstage), by boring into the wood of the warehouse or hiding in accumulations of flour, etc., would survive the winter.

In the spring they migrate out onto the flour and finally climb up on the rafters to lay their eggs, not on the rafters but in them. This beetle also has acquired the peculiar and very bad habit of dropping its ovipositors through the mess of cotton flour sacks and laying its eggs right inside the sack. That is the reason it is an economically important insect. Other insects do not lay their eggs inside the flour sacks, so are not too important.

But obviously the processor has no protection against this insect. He can't tell whether or not the bags are infested so he sells them in good faith —and presently the flour or feed comes back full of weevils. He examines a few other sacks and sure enough they're full.

In Canada at the moment we are on a stick as to infestation of foodstuffs as you are in the States.

Human Factor

About ten years ago the Dominion government set up an investigation to control this weevil causing all this trouble. Recommendations were made that the warehousemen use an insecticide two or three times a week, all through the summer months.

Well you know what happened. Try to get 7,000 warehousemen to universally conduct such a program. The program fell down because of the very large human factor involved. Somehow they only got together on weekends to clean the floors. This is how matters stood until a few years ago when we were asked to investigate.

We immediately recognized that the solution was possible through the use of good insecticides. By such insecticides I mean those products which when laid down upon dust, floors or walls, will remain active against insects touching that surface for very long periods, with long lasting effect. DDT was an example of such an insecticide. We knew that the insects had to cross the floor in order to reach the sacks and if we could catch them then, we could solve the problem.

Seventy-five Tests; Six Insecticides

Last year we set up a very large scale experiment. We chose 75 warehouses in Manitoba for the experiment, and the only criterion for their making the experiment was that they had previous infestation. We took 15 of these warehouses and said "don't touch these, we want the normal picture. We may use the old contact insecticide because we have previous information—and were only able to get it by 33% control. So leave these 15 warehouses alone. We want them for comparison." That left us 60 sheds, and these we divided into 6 groups of 10 each and we tested six different insecticides.

We thought we knew the results we were going to get.

We did that by placing three 10-lb. sacks of flour in each warehouse. We knew that if insects were present in the sheds they would lay eggs on any flour sacks exposed. Three sacks don't seem to be very much coverage in a flour warehouse. Actually, in the unclean warehouses, we never failed to get a test. These sacks were placed in the warehouses in April and were left there until November.

Egg Count

At the various intervals we shifted them over a very fine sieve and counted the number of insects who

had succeeded in reaching the sacks and laid eggs. Obviously if the treatment was not very good we'd get quite a number of eggs per sack. If the treatment was moderately good we'd get a lesser amount, and if the treatment was very good we would get none or very few.

In the course of this work we found out something about the insect itself. We definitely proved that it does lay eggs inside sacks. We had 45 sacks in those 15 warehouses and when we examined them we purposely swept off the outside of those sacks, took the sweepings back to the laboratory and examined them under a microscope.

Then we sifted the flour on the inside of those sacks and here's what we found: 600 eggs inside the sacks, right in the flour, while in the sweepings we only found 3 eggs. So it definitely proved our contention that the insect laid the eggs right inside the sacks. It would also seem to indicate the period of egg laying and that, you will readily agree, is an important factor. If we know the period at which they are going to lay eggs, that would be the period demanding the utmost protection. They lay eggs, we found, from about April until the latter part of June. Therefore if we can have the floors or sacks treated with the proper insecticide during the period we can forget those few weeks in the fall.

Now, in the experimental treatments you will recall that we had 60 warehouses and we had six insecticides we wanted to test. We had DDT in three different combinations, then we had the insecticide known as 666 which was dispersed in the form of a smoke and also in the form of an oily solution. (666 had a very harmful effect.)

Then we used the air bath sprays. They are not poisonous and therefore will have great advantage in treating grains and other products which will ultimately be used for human consumption. They will kill insects by drying them. That is exactly what it does and it is a very unusual type of insecticide. The air bath used for the most part was magnesiate acid and another one aluminum acid.

Treatment was applied before the insects had emerged. In April all six were tested on the warehouses except for the 75 we kept for comparison. Half of these were checked in June to see if two treatments were more rapid than one.

Results

The results were such that over the entire period from April to November this is what we found: in those cases receiving no treatment at all, 3 of the 7-lb sacks showed 186 eggs, that's an average of about 86, not nearly as high as 600. In the case where 666 smoke was used we had only 108 insects or 32% control—not very good. In the case of two other insecticides we got only 4% control. The 5% DDT oil gave us respectively 95% and 99% control.

The 666 material was so highly effective that we used it at a concentration of one-half of one percent. DDT was applied at 5% and we gained essentially the same control as we did with DDT. In other words, 666 is about 10 times as effective as DDT.

With these results we were able to advise the industry that effective control measures were available.

As a matter of fact we had a number of things which were used for two years and we were able to show that by treating the sheds with these products for two successive seasons, that the insect infestation was reduced to practically nothing. Feed sacks were treated to a solution of DDT, then dried and then filled. We also investigated paper sacks.

We exposed these treated sacks along with untreated sacks. The untreated sacks that had an average of 60 insects were packed, whereas the treated sacks alongside the untreated sacks showed only a fraction of a percentage. They might just as well have been in sealed drums. Unfortunately, paper sacks are not considered suitable for the country houses in Canada.

Attack Every Link

Almost all kinds of stored foods are attacked by a variety of insect pests. The granary weevil attacks the whole wheat kernel and the flour weevil is a pest of flour and other processed cereals. Stored seed is destroyed by larva of the Indian Meal Moth which eats out the germ of the wheat kernel and other types of seed. Wheat becomes bread by a chain of processes and insects attack every link in the chain.

National Fire Protection Assn. Notes

FIRE NEWS published by the National Fire Protection Assn reported the results of the fire prevention week contest which included in competition entries from 2928 American and Canadian municipalities, fire departments and fire safety organizations. Oak Ridge, Tenn., was the first prize winner with second and third places going to Memphis and Chicago, respectively. Ottawa, Ontario was the first place winner among Canadian entries, Fort William, Ont., ranking tenth.

In the Industrial plants with the best fire safety programs the Searle Grain Co., Fort William, Ont., ranked eleventh.

The NFPA is the clearing house for information that is authoritative on the subject of fire protection and fire prevention. Membership is open to any individual or organization interested in the protection of life and property against loss of life. Non-commercial and non-profit making, the association is supported by the dues of its members, which membership now includes over 170 national and regional organizations, and over 12,000 individuals, firms and corporations

The association has two functions: one, to provide standards under the guidance of which fire waste may be checked; the other, to educate the public so that loss of life and injury from fire will be reduced and the needless fire destruction of property will be halted. The NFPA publishes many fire codes and other reference works, as well as suggested laws and ordinances, and standards.

Listed in FIRE NEWS which each month prints a selected list of fires of particular significance is the following: GRAIN ELEVATOR, Kelim, Colo.—Employees state that a spark from an electric motor was the cause of fire that spread rapidly through the concrete and metal-clad elevator located in an area without fire protection. The building contained 125,000 bushels of wheat and barley. Fire departments from surrounding towns responded but were handicapped by lack of water. Loss $400,000.

DEATH *STALKS THE BINS*

A DISCUSSION OF AN IMPORTANT SUBJECT

Protection given to employees cleaning bins and tanks in grain handling and grain processing plants is an item of vital importance.

Discussion of this subject during a "round table" session of the Grain Handling and Processing Division, Food Section, National Safety Congress, recently held in Chicago with H. J. Aldrich of Spencer Kellogg and Sons, Inc., of Buffalo, in charge, brought out the following pertinent comments:

"What protection is being given in grain elevators to employees cleaning bins?"

RAY O'LEARY, Corn Products Refining Co., Chicago: "We have a standing rule that at all times and in all plants, before a man enters a bin to clean or make repairs, he must be wearing a safety belt and have an attendant outside."

GEORGE H. STEEL, Ralston-Purina Co., St. Louis: "What kind of mask is furnished to the men?"

O'LEARY: "A free-air mask. Manual lifts are used inside tanks."

R. J. COLLINS, Spencer-Kellogg and Sons, Buffalo: "We have a bosun's chair with safety harness attached."

J. P. GRAFF, American Maize Products Co., Roby, Ind.: "We use aluminum ladders in steep tanks, which are from 35 to 40 feet deep. Does anyone here use pressure doors?"

Aerate Noxious Gases to Avoid Tragedies

ALDRICH: "The tanks in our place are equipped with manholes in the base for cleaning, but must be thoroughly aerated in order to eliminate any noxious gases. The manhole is large enough to permit a man to enter."

R. H. VIDAL, Ralston-Purina Co., Davenport, Ia.: "We have cookers and steam pressures with a bottom release to help a man to escape."

COLLINS: "Any tank which requires entry to be cleaned should be considered dangerous and proper precautions should be taken accordingly."

ALDRICH: "Some of you may remember a serious accident which occurred in Buffalo some years ago. An underground tank had been closed up for two months and had about a six-inch accumulation on the bottom. It was opened up and a man went down into it, but he died instantly. A second man went down to rescue the first, and he succumbed.

"A third and fourth man tried unsuccessfully to rescue the others. By the time the fifth man tried, the fire department arrived and because they took the proper precautions they were able to bring all of the men out. It was quite a mystery as to why these men died so quickly.

"It is now known that the oil tank had developed toxic gases. In our firm, if we have a linseed tank to clean, no man is permitted to enter until after it has been aerated. Soybean oil does not seem to be as toxic as linseed oil.

"Some of you grain men may have had similar experiences with various types of grain. There is a question as to whether or not flaxseed develops hydrocyanic acid gas."

Grain Breathes

P. U. WHEATLEY, International

Milling Co., Davenport, Ia.: "Grain breathes just as a human does, taking in oxygen and exhaling carbon dioxide, so that if we do not have thorough aeration there will be some CO_2 which is toxic. CO_2 is heavier than air and will sink to the bottom of a tank."

C. W. JACKSON, General Mills, Inc., Enid, Okla.: "I just want to supplement Mr. Wheatley's remarks: It is well known that grain subjected to greater heating creates a greater amount of CO_2 than grain under normal conditions, so that the condition of grain stored in a tank determines the length of time aeration should take place before permitting men to clean. We make our entry from the bottom for cleaning purposes. We have a team of three men at all times, one at the top, one at the bottom and one inside. This is an iron-clad rule."

R. J. BROOKS, Robin Hood Flour Mills, Humberstone, Ont.: "We have a practice of lowering an air line into a bin for at least one hour before a man is permitted to enter the tank."

Suggests Permanent Air Pipes

STEEL: "My thought is that CO_2 is twice as heavy as air, and since compressed air frequently contains CO_2, the use of compressed air for aeration would not be suitable. We have used a suction venting tube for withdrawing noxious gases. This is what we would like to do but we are still working on some of the angles. It has just been suggested to me here that an outside standpipe with an inlet at the bottom should take care of that."

BEN S. HAWKINS, JR., General Mills, Louisville, Ky.: "How do you remove grain from the bottom of tanks? If gravity feed is used, why couldn't CO_2 be drawn off the same way?"

Answer: Some tanks are not equipped with bottom openings, however every tank should be fitted with a bottom opening to remove noxious gases.

CLARENCE A. MACK, Corn Products Refining Co., No. Kansas City, Mo.: "Is it always feasible to have a bottom opening—because of the deterioration of metal fittings?"

H. M. Shepherd, Robin Hood Flour Mills, Calgary, Alta.: "In our place, where two rows of concrete tanks are used, the center tank is used for storage and there is no way to get to it except through the hopper bottom opening—which does not permit the entry of a man. The only entry for a man is from the top."

G. R. STANTON, General Mills, Keokuk, Ia.: "We use considerable hydrochloric acid in tanks as shallow as 12 feet, and I say no matter what the depth of a tank is, it can be dangerous. We use a relay system with a man only permitted to work inside a tank a specified length of time, and then he is replaced with another."

Nurse Handicapped

ALDRICH: "If water is mixed with linseed, it is possible for toxic gases to develop, but if the linseed is kept dry, this will not happen. Is it a practice generally to have the liquor removed from an open tank before permitting a workman to make repairs? It is in our company.

"I know of one fatality resulting from a workman falling into an uncovered tank. This man was connecting some couplings on some piping passing over the top of the tank. In the morning, one half of the tank had been covered but after lunch, while the foreman was away, the workman began work on the section of piping extending over the uncovered portion of the tank.

"He had one foot on the ladder, and placed his other foot on an iron support extending from the side of the tank. Apparently his foot slipped and he fell into liquor having a temperature of 156 degrees. He cried out as he fell and was rescued by other workers nearby within one minute of his fall.

"The accident occurred on Wednesday afternoon and the man died on Saturday. At the time his company was severely criticized because the man was not given a hypodermic in-

jection to ease his pain during the time it took to transport him from the plant to the hospital. However, the company nurse claimed that she was not permitted to give such injections without the doctor's specific permission, altho she had morphine in her first aid stock." [At this point several spoke up to say that in their respective plants the nurse is permitted to exercise her own judgment in this regard.]

DR. PAUL W. RUSH, Corn Products Refining Co., Argo, Ill.: "Our plant nurses have instructions to give morphine injections whenever they believe it is required, taking care however that the particular condition of the injured person does not contraindicate the use of such opiates. There is no reason why any injured person should be allowed to suffer needlessly because of a mere technicality. Naturally all narcotics must be strictly accounted for and the nurse and doctor are the only ones to keep such stocks and account for their use."

TRUCKERS SET A RECORD

Approximately 7,000,000 trucks traveled the nation's highways in 1948, which is 1,035,000 more than the 1947 number. More freight was carried and more vehicles operated than at any time in the history of the trucking industry.

SODIUM GLUTAMATE FROM GLUTEN

Treatment of gluten from corn, wheat or soybeans with hydrochloric acid yields glutamic acid used in manufacture of monosodium glutamate, for which a great demand has developed from food manufacturers as a flavoring.

The process yields as valuable by-products several amino acids such as methionine, leucine, tyrosine, histidine and cystine. The A. E. Staley Mfg. Co. has just completed at Decatur, Ill., a plant for the manufacture of the glutamate.

Industrial Accidents Cost Billions

Approximately 2,050,000 industrial accidents caused the loss of 280 million work days and cost business and the workers $2,600,000,000 in 1947. These were the figures given by Dr. Harry Spaulding, president of the American Academy of Compensation Medicine, to members of the Congress of Industrial Health at their recent meeting. He said the man days lost were equivalent to one million men idle for more than a year.

Recently released 1948 figures for New York alone show a total of 818,694 accidents, the largest number in its history. Half the cost, or 1 billion, 300 million dollars was immediately visible in wage losses, medical care costs, and costs of workmen's compensation insurance. The other half was the estimated value of damaged equipment and materials, production slow-downs, and time lost by workers not disabled by the accidents in question.

Much of the cost went to malingers who are aided by loose and confused state laws. According to Dr. Spaulding, there are many, of course, who will not work unless they have to do it or are driven to it in order to eat. There are others whose disabilities are terminated by the undertaker. Many of the injured who if they can find a design for living by benefit payments, will not work and will in fact use the law to its utmost to preserve and protect their effortless livelihood.

"What incentive has a $60 a week worker to terminate his disability," asked Dr. Spaulding, "when he gets mutual benefits of $20 a week, payments on an accident health policy of $50 a week, and compensation payments of $20 to $32 a week?" He urged that a careful clearing of all cases involving disability be made and that efforts should be undertaken to end "seasonal" and "retired" workers.

Never Grow Old

Never fasten ladders,
It's fun to see them slide;
Never wear your goggles—
Remember you have pride.

Never put on gloves,
They're cumbersome as hell;
Be as careless as you can,
None will ever tell.

Never read the safety rules,
All they are is a bluff
Of guys who draw a salary
For handing out that stuff.

Abide by all the rules above—
Don't do as you are told,
And I'll guarantee you, Brother,
That you never will grow old!

(*National Safety Council*)

MIDWEST MALTING BARLEY CONTEST WINNERS

Vernon H. Moore, of Clinton, Wis., has been named the winner of the 1948 malting barley contest conducted in seven midwest states by the Midwest Barley Improvement Ass'n, it was announced Jan. 18 by Dr. John H. Parker, director of the association.

As an award for his accomplishment, Moore received $1,000 in cash, a handsome trophy, and a special ribbon of honor, as well as an all-expense trip to Minneapolis to attend the Midwest Barley Improvement Conference and Malting Barley show, being held at the Hotel Nicollet.

In addition to the regional award, Moore received the first Wisconsin states prize of $500, a county prize of $25, and state and county trophies. In the final judging, Moore's barley competed with samples from more than 125 carloads of the grain, grown by farmers in North and South Dakota, Minnesota, Wisconsin, Iowa, Illinois, and Michigan. The prize-winning barley was of the Kindred variety, and was grown on 50 acres of Moore's 186 acre farm.

Second award went to Armund Freitag of Beaver Dam, Wis., who won $800 in cash and a trip to Minneapolis. He also won the second Wisconsin state award of $400 and his county prize of $25, as well as a county trophy, with his sample of Kindred barley.

Third place in the regional competition went to Manford and Ed Steen, brothers, of Milan, Minn. Other winners of generous prizes were: L. A. Kimball & Son of Genoa City, Wis.; Art Greenberg of Grand Forks, N. D.; Earl Chapman of Maple Park, Ill.; Leonard and Herman Schiernbeck of Kiron, Ia.; Roy D. Eykamp of Lake Preston, S. D.; Walter Kretzschmer & Sons of Pigeon, Mich.

SHIPPERS WARN CAR UNLOADERS

Even though they don't know who is responsible, Walt Gay, Louie Johnson and Bob Swen of the Monarch terminal elevator in Minneapolis would like to say "Thank you" to the men who loaded Union Pacific boxcar 193270 for delivery to their plant.

Notes posted on the sides of the car read:

"Notice to car unloaders: "Two grain doors on floor about eight feet from door." (Then an arrow was drawn to show in which direction the doors were.)

Herman Wilhelm, Monarch superintendent, says: "That thoughtfulness by the car loaders was greatly appreciated by the men. They were saved considerable time, trouble and even possible injury by that note. Elevator men everywhere should always take time out to post a notice on cars when they can foresee possible trouble in handling them."—The Grainville Bugle.

BUFFALO ELEVATORS FULL

Although short of last year's total by about 2,000,000 bushels, grain receipts in the Port of Buffalo this year exceeded the average in the last ten peacetime years by about 8,000,000 bushels.

No official tally has yet been made but it appeared in preliminary year-end reports that grain receipts this year total about 128,250,000 bushels. This compared with 130,188,000 bushels in 1947 and 121,884,141 bushels in 1946.

The last grain boats of the season are unloading their cargoes here. Waterfront commercial elevators now are bulging with 24,154,570 bushels, nearly their capacity.

FLOUR MILLING PRODUCTS

Wheat flour production in November was estimated at 22.9 million sacks, by the Bureau of the Census, Department of Commerce. This was 5 percent lower than production in the previous month (24.2 million sacks). Output was 3 percent less than the 23.7 million sacks produced in November 1947. Production of flour for the eleven months of 1948 totaled 254 million sacks, a decrease of 9 percent from the 279 million sacks produced in the corresponding months of 1947. Production for November was at the rate of 83.2 percent of capacity.

Wheat grindings during the month were estimated at 52.4 million bushels as compared with 55.4 million bushels in October. Offal production of 434 thousand tons was about 28 thousands tons less than in October.

These figures represent the output of 1,100 flour mills, 425 of which report monthly to the Bureau, and the rest annually. The 425 mills reporting on a monthly basis account for about 96 percent, the 1,100 mills reporting annually, for about 98 percent of the nation's production of wheat flour.

Reports of rye ground in November totaled 396 thousand bushels from which 172 thousand sacks of rye flour were produced. This compared with 427 thousand bushels ground to produce 185 thousand sacks in October.

SAFETY TRAINING PROGRAMS

TYPES OF WORKERS — METHODS OF CORRECTION

CHARLES H. BROADED
Director of Industrial Safety
Fisher Flouring Mills Co.
Seattle, Wash.

Everyone is vitally interested in getting out the largest volume of production in the most efficient manner. Line supervisors are constantly doing everything possible to achieve this objective since inefficient low cost unit production is the basic objective of every executive, superintendent, foreman and lead man.

There is one aspect of achieving this objective that is very often overlooked by line supervisors — this aspect is one of safety. Correctly planned production is production in which the best possible use of time, materials, equipment and processes are maintained. Anything which interferes with correct procedures in this regard definitely influences the efficiency of production. This relationship is often not understood by line supervisors; consequently they overlook a very real and worthwhile method of increasing production, namely, seeing that things are performed in a correct and safe manner.

Accident prevention and efficiency of production are both achieved whenever all processes are performed in such a manner that no accidents occur. Whenever accidents occur, they definitely limit the output of production. Because materials may not be piled properly, time may be lost. If tools and equipment are not in proper working condition and properly stored, delays may occur. The prevention of loss of time, damage to equipment and interference with planned procedure all take their toll in achieving maximum efficiency.

Accidents which occur may result in spoiled material, damaged equipment, defective parts, costly delays without anyone having been injured physically by these accidents. There is a proper way of doing every job, and if they are properly planned and performed as they are supposed to be, we will not have accidents. This is, in fact, all there is to accident prevention. Namely, getting people to do their jobs in the manner in which they should be performed.

Statistics, compiled by the National Safety Council, show that a person may have from 300 to 500 accidents before he actually sustains an injury. It is impossible to determine whether the injury will occur on the first accident or the 500th accident.

Accidents result from two major causes. These are unsafe conditions and unsafe acts. Unsafe conditions are such things as slippery floors, improperly-guarded machinery, untidy work areas, improper tools and equipment, etc. Unsafe acts are such items as running up and down stairs, reaching too far on a ladder, using a grinding wheel without goggles, indulging in "horse play", lifting improperly, etc.

The safety engineer spends a considerable portion of his time eliminating unsafe conditions and, in the majority of our industrial establishments which have a competent industrial engineer and have spent sufficient time and energy eliminating unsafe conditions, there are very few of these remaining with our present state of knowledge about them. Unsafe acts, however, are in an entirely different category, and not too much has been done to remedy the unsafe acts in which employees indulge. There is no safeguard for a wandering mind, and all the guarding in the world will not prevent an employee who is absent-minded and careless from having accidents and, incidentally, suffering injuries.

Any effective safety training program must show line supervisors who are directly in charge of employees how to motivate these employees so that they become careful, conscientious and safe workers. In order to do this, every line supervisor must be trained to recognize the various types of people in his crew and to apply methods of correction which are effective.

People change from one course of action to another because they believe that it is advantageous to do so. The normal individual thinks in such a manner that he automatically weighs the advantages and the disadvantages, then he acts so as to obtain the most advantages. If the disadvantages outweigh the advantages, he usually does not make a change in his method of acting. In order to change bad working habits which employees have that are unsafe, hazardous, or actually dangerous, the supervisor should arrange his talk so that disadvantages which will accrue to the individual are clearly stated. This will motivate the employee away from the bad action. Then the supervisor should point out the advantages which will accrue if the individual does the job in a correct manner. This will motivate the employee toward the correct action. By pointing out both the advantages and the disadvantages, the supervisor provides a push and pull effect which has more power than either a push or pull by itself. This technique can be used in changing any habit which an employee has but is particularly useful in safety prevention work because it is very easy to work out advantages and disadvantages so that the employee can see that he has everything to lose by following a bad pattern and everything to gain by following a good habit pattern.

Following are a number of advantages and disadvantages which are particularly powerful in stimula-

MARK YOUR CALENDAR

The 20th Anniversary Convention of the Society of Grain Elevator Superintendents will be held May 11-14 at the Nicollet Hotel, Minneapolis. Plan on attending.

ting employees toward correct and safe habits of working.

DISADVANTAGES OF INCORRECT METHOD

1. Employee might hurt a fellow worker.
2. The job is harder.
3. The job takes more time.
4. Employee may suffer an injury.
5. He may have a long period in the hospital.
6. He might suffer some personal disfigurement.
7. He may lose a hand, foot, arm, leg, etc.
8. He may lose his reputation for being a careful worker.
9. He may be criticised by fellow workers and his "boss".
10. His wife and children may suffer if he is unable to work for a long period of time or unable to carry on his regular work.
11. He suffers bodily pain while recovering from an injury.

ADVANTAGES OF CORRECT METHOD

1. Protects fellow workers.
2. It's easier.
3. Shorter or quicker.
4. Protects income.
5. Protects family and children.
6. Keeps reputation for being a good, safe workman.
7. Gets approval from other workers and "boss."
8. Protects personal features.
9. Protects Company's reputation for honesty.
10. Insures satisfied customers because of quality products. (Protect's one job because firm will continue in business).

This particular method will work best with the regular type employee but there are several other types of individuals which every supervisor must know how to motivate if he is to make them into safe, conscientious and careful workers. Following is a breakdown of the most commonly found types and a suggested approach to getting each one to respond well to safety instruction and training.

TYPES OF PEOPLE

1. Regular Fellow

In describing this type of person, we often say he is a "good guy" or a "regular Joe." He has a nice balance of personal characteristics which give him a correct attitude and approach to problems that he may encounter. He is conscientious, cooperative, loyal and dependable. He is even-tempered and reasonable. He is industrious and has a proper regard for himself and others in his working habits. (This type of employee constitutes from 70 to 80% of the individuals in every foreman's group.)

Suggested Approach

This type of person constitutes the majority of employees in any supervisor's group. "Regular" employees cause little difficulty and respond very well to good instruction and average supervision. They respond best to exactly the kind of treatment which the supervisor would like to receive from his own superior. The method of pointing out the advantages of doing a job one way and

"DONT'S" FOR THE POWER TRANSMISSION BELT

1. Don't cut the end of the belt without making use of a steel square. Crooked belts are torn easily.
2. Don't guess at the proper positions for lace holes. Each hole carries part of the load and should be in perfect alignment with other holes.
3. Don't put a belt on too tight. This may overload both the belt and bearings.
4. Don't run a belt that starts crooked. Take the belt off and check the joint before damage is done.
5. Don't allow shifters or other equipment to rub the belt edges. Serious rubbing may lengthen one edge.
6. Don't allow belts to operate on pulleys that are out of line. Belt, pulley and shaft, preferably, should all be in perfect alignment.
7. Don't hold a belt on a pulley with a bar or a brace. If the belt tends to come off, find the cause and correct it.
8. Don't allow oil to fall on a belt. Oil causes slippage, heating and cracking. De-grease the belt and re-oil or dress it properly. (See Safety Instruction Card No. 430 on "Dressing the Belt.")
9. Don't put undersize belts in heavy duty service.

National Safety Council

MACHINERY GUARDS

The importance of guards may be realized easily. Picture yourself slipping, throwing out your hand to catch yourself, and finding it resting on a guard covering some piece of moving machinery.

Think what might have happened to your hand if someone had left that guard out of place!

It costs money to install guards; but your company is doing this and many other things in the plant to protect you and other employees. Your cooperation will be appreciated.

1. Do not remove any guard unless for repairing, oiling or adjusting the machine; always stop the machine first; and always replace the guard when the work is done.
2. Before starting work at any machine make sure that all guards are securely in place.
3. If you notice that a guard has been carelessly left off any machine, notify your supervisor.
4. If you find that any guard is broken or furnishes inadequate protection, notify your supervisor.
5. Your suggestions for aditional guards in hazardous places will receive careful consideration.

National Safety Council

the disadvantages of doing it another but poorer way is mentally grasped and properly followed. Since these employees are reasonable, they respond quickly to any type of suggested action which will make their work more efficient, safer, easier, or more productive. They have good ideas for doing work and their suggestions should be analysed and, if possible, put into practice. If their ideas are rejected, it should be done tactfully in order not to stop further suggestions.

2. Stubborn

This type of individual is one who possesses a large share of the stubborn trait in his characteristics. He often is referred to as the person who has a "one track mind." He is hard to convince and occasionally will do things exactly opposite to what has been suggested to him. People often refer to him as thick-headed, obstinate and dogmatic.

Suggested Approach

This type of individual cannot be forced to do things. It is no use telling him he has to do something "or else" for he will take the "or else" most of the time, and if this produces results which you do not want to obtain, you have failed. This type of individual must be persuaded. He requires selling. He likes to think that all ideas are his. He can often be led to accept a course of action if he thinks it's his own idea, or will adopt it if his opinion is asked. He is an extremely proud individual and an appeal to his pride, accomplishment, prestige, reputation, etc., with a positive approach is very effective. Sometimes the "reverse english" technique can be used on the person who is extremely stubborn. To do this, the supervisor "tells" the person to do exactly opposite of that which he wishes accomplished. The obstinate person will do exactly opposite of what he has been told and consequently, will actually do what his supervisor wanted done. This technique must be used with discretion and will work only with a very small percentage of stubborn individuals. There is considerable danger in it but occasionally it is extremely valuable.

3. Temperamental

This type of person is usually a very sensitive individual. He resents criticism and is very easily offended. He suffers the delusion that people are picking on him and, in the worst stages of temperament, he may feel he is being persecuted by everyone including his very best friends. He "flys off the handle" and often has a large number of alibis for his actions.

Suggested Approach

This type of person must be handled with "kid gloves." He should not be criticised. The "sandwich" technique should be used whenever he is being corrected. To do this, the supervisor tells him about some particularly good piece of work, then suggests that a poor action be corrected and then finishes the conversation by referring to another good piece of work which the employee has performed. *This type of person is motivated by approval*

and praise. He responds to the advantages of doing a job properly. Disadvantages scare and upset him because he often has a vivid imagination and is impelled toward the thing which he thinks about most of the time.

4. Careless

The person with too much carelessness in his personal characteristics has little regard for other people and still less for his own safety and welfare. He has little regard for danger and is often described as a fellow who "doesn't give a damn." He is not bothered too much by the thought of injury or personal loss.

Suggested Approach

This type of person requires very rigid control from his supervisor. He requires a considerable amount of training so that good working habits become almost automatic. He does not react favorably when problematical advantages of a given course of action are pointed out to him; consequently the losses which will accrue to him if he follows a given course should be pointed out in no uncertain terms. The benefits which he will lose have the most effect on him and these should be stressed. Pointing out that he may wind up in the hospital with a lot of broken bones and be an invalid for the rest of his life and that his family will suffer and his children fail to obtain an education is often necessary to stop this type of person from performing an unsafe act. He must have "the law laid own to him" sufficiently so that he can be kept from doing things which will eventually result in an injury.

5. Shiftless

This type of individual has never learned to accept responsibility. He lives in a dream world most of the time and is usually a great optimist. However, he doesn't cooperate too well with his supervisor and must be watched all of the time if he is to do a fair day's work. He is usually just looking for payday and, as a result, has a work record of drifting from one job to another at very frequent intervals.

Suggested Approach

This type of person will seldom make a good employee except for casual labor. Since he does not feel responsible for his own action, he often does not consider what responsibility he has toward others. For this reason, his work assignments must be very definite. He will not look for work if he is finished with a particular job and has not been told what one to start on next. His initiative is poor — his concentration and attention is apt to be quite weak. Instructions must be firm, complete and often repeated two or three times. This type of person presents no large difficulty to the supervisor but will cause some difficulty if the above recommended technique is not followed.

6. Timid

The person with too much of the shy or timid characteristics in his make-up is usually a retiring individual who does not have much confidence in his own ability. He is not forceful and will not ordinarily voice his opinions or express his ideas about a subject unless he is led to do so. He often is referred to as a "Casper Milquetoast" and is a "negative" person.

Suggested Approach

This type of person probably suffered from "too many burned fingers" during his childhood and, consequently, is fearful of what will happen to him. He withdraws from activities in order to protect himself. He is often a very good thinker and apt to be a very cautious individual. In the extreme cases, he may be so cautious and fearful for his own safety that he will fail to do those things that he should and, consequently, cause fellow workers to have accidents or be injured. This type of individual responds best to expressions of confidence in him by his supervisor and should not be criticised too much. He often likes to work by himself and will perform very satisfactorily if he understands exactly what is needed. Opportunities to build confidence in, and respect for, his own ability should be used

whenever possible. This type of person needs encouragement and has a very real need for obtaining approval from the people for whom he works. Ribbing and ridicule from fellow workers toward this type of person should definitely be discouraged by the supervisor.

7. Nervous

This type of person usually has an excellent set of nerves whch cause him to be "high strung" and somewhat "flighty." He is often a tall, thin, lanky individual without much excess fat. Due to the fact this his reaction time is so fast, he often acts without thinking. He is excitable and can become jittery unless he exercises sufficient self-control.

Suggested Approach

This type of person is usually a very excellent employee. His work is done quickly and he works diligently. He has a tendency to jump from one activity to another a bit more than is necessary but this tendency can be overcome very easily if his supervisor clearly states the sequence of work and sees that he does not hop from one job to another without finishing each job as he goes along. A supervisor needs to be very calm when talking to this type of person and should slow his speech down to the point where it is about 100 to 150 words per minute. This type of person should not be asked to do a lot of rush or emergency work for he will often start doing it very hurriedly and without sufficient preparation. This may lead to an accident which will result in an injury. Since this person's tendency is to act rapidly in almost all situations, his supervisor's principal job is to slow the individual down a little bit so that he has time to think how he is going to do a job before he actually starts doing it.

8. Smart Aleck

This type of person has a too high opinion of his own ability and a too low opinion of others. He thinks he knows all there is to know about every condition and situation in which he operates. His way of operating is always right. He can't be shown any alternative method because he is always convinced that other methods are inferior to his own. He often has very convincing arguments about everything from "the international situation" to "why Bill Jones beat up his wife." He is usually a loudmouthed persons and will often remark, "I sure told that guy off."

Suggested Approach

This "know it all" type of person irritates people and can be a disruptive influence among your employees. He is, however, a very difficult individual to change. If you stop him from talking wildly about one situation, he will often begin to talk wildly about another situation. His supervisor can do several things which will improve this. He can adjust his own mental reactions so that he is not bothered too much by the loudmouthed individual. The supervisor can let the fellow "spout off" about a particular item if he definitely knows the man is wrong and then prove he's wrong in the presence of several fellow workers. This technique has dangers and must be used with caution because it is bad supervisory practice except with this type of individual and in situations where the rest of the group feel that the fellow should be challenged for the wild statements he is making. The supervisor can have a talk with this type of individual and explain to him that he is earning a reputation for advancing ideas which are poor and should stop this practice since it carries definite possibilities of losing one's reputation for straight thinking and reliability.

Another aid which can be given the foreman is a good safety bulletin board well supplied with visual aids representing correct methods of doing work or posters ridiculing the idea of doing jobs improperly.

Competition between departments helps to keep employees alert. A particularly effective contest technique is to have each departmental safety bulletin board lettered "No. of Days since our Last Lost Time Accident," and have someone in the department change the number of days shown each morning as long as no lost time accidents occur. When one occurs, the figures are removed and the department starts out with "0" days.

Taking pictures of unsafe condi-

tions or unsafe acts and sending a copy to the department involved with a request to correct the situation usually has good results since the supervisor knows that a permament record has been made of an unsatisfactory condition or procedure in his department.

In the final analysis, anything which interferes with the orderly sequence of properly planned production reduces output. Only by an effective safety training program which eliminates all unsafe conditions and teaches employees to act safely can line supervisors achieve maximum output.

$150,000 FIRE LOSS

The Wheat Bros. plant at Moravia, N.Y. was recently destroyed by fire with an estimated loss of $150,000. Flames destroyed the feed mill, elevators and warehouse.

ADD 500,000 BUSHEL CAPACITY

Flour Mills of America, Inc. will construct additional grain storage at Alva, Okla., amounting to $500,000 bushels. Pres. Henry H. Cate says construction will start in time to assure completion for the 1949 harvest following formal authorization by the directors.

The new project will increase capacity at Alva to 2 million bu., and will enlarge the company's aggregate capacity to 13 million bushels. The daily capacity of the company's flour mills now has reached 34,000 cwt. sacks.

D. J. BERNINGER DEAD

Daniel J. Berninger, 58, superintendent of the Early & Daniel Co. Fairmount elevator, Cincinnati, Ohio, passed away on Jan. 15. He had been with the company for 26 years and will be succeeded by his son, Raymond J. Berninger who has been with the company for 18 years, the last ten as assistant superintendent. The Fairmount elevator has a capacity of 2 million bushels and is one of the largest Soft Red Wheat receivers and shippers in the country.

O'LEARY TO CORPUS CHRISTI

Ray O'Leary of Corn Products Refining Co. left on Jan. 6 to supervise safety measures at the company's new 20 million dollar plant at Corpus Christi, Texas. The new plant will start grinding operations about Feb. 1 and O'Leary will be on hand to develop a safety program to fit the plan. Ray had just been elected acting vice-president of the Chicago SOGES Chapter to replace Lincoln Scott of CPRC who had been transferred to Tokyo to assist the Office of Food Administration of the United States Occupied Areas. Superintendent of the Corpus Christi plant is Fenton "Red" Holm of Kansas City.

A-D-M PLANT DAMAGED BY FIRE

Thousands of bushels of soybeans in Archer - Daniels - Midland Company's drying plant in Minneapolis were destroyed by fire this month. No estimate of the loss sustained was given but according to Clifford MacIver, plant superintendent and president of the SOGES, damage was considerable. The drying plant was of steel and concrete construction and was valued by A-D-M at approximately $75,000. None of the storage elevators, though near the fire, were damaged.

GLIDDEN PLANT TO COST 3 MILLION

Contractor for the new 250-ton per day soybean solvent extraction plant being built by The Glidden Company at Indianapolis, Ind., is the Chemical Plants Division of Blaw-Knox Company.

In addition to engineering and erection, the contractor will supply the extractor, four Lewis flaking mills, a vapor desolventizer, pressure toaster and a deodorizer. All this process equipment is of Blaw-Knox design.

The amount of the award to the contractor was not revealed but the total project, which includes a large grain elevator, is reported to cost an estimated $3,000,000. The plant is to be ready in time to process the fall crop of soybeans.

PILLSBURY PLANTS SET SAFETY RECORDS

"Champions of Safety" titles were awarded to Pillsbury plants on the basis of records set in the inter-plant safety contest. 1948 was the most successful accident-free year in the company's 80 years. The safety contest was conducted among the 18 plants operated by Pillsbury, Mills, Inc. The contest was arranged through three separate leagues according to size and man-hour exposure to accidents during working hours. The plants made notable records: Clinton Soy Bean Plant—extended its "days operated without a lost-time accident" to 1057; Colton, Cal., — 472 days; Enid, Okla., — 439 days; Wellsburg, W. Va., — 427 days; Centerville, Iowa, — 417 days; Culver City, Cal., — 407 days; Clinton Feed, — 386 days; Springfield, Ill. also won the safety record flag. Each employee in the winning plants will receive a General Electric automatic iron in recognition of the achievement, a total of 1844 irons will be distributed.

RALSTON PURINA AWARDED FLAG

Ralston Purina Company's Circleville, Ohio, plant recently was awarded the Liberty Mutual Insurance Co. accident prevention flag in recognition of its record for safety. The plant operated 501,632 man-hours from Sept. 1, 1946 to Nov. 15, 1948 without a lost-time accident.

MUNICIPAL ELEVATOR LEASE PROPOSED

Proposals for lease of the Omaha Municipal Elevator were made to the Dock Board recently by the Omaha Grain Exchange. The basis for the grain group's proposal is a 50-50 revenue split between the exchange and the city and a charge of 1½ cents per bushels for unloading grain from cars and elevating it to barges is also under consideration. The exchange suggested that charge decrease as volume increases and it is expected that their proposal will be accepted.

CHAIN BELT OPENS NEW OFFICES

Chain Belt Company of Milwaukee announces the opening of two new District Sales Offices.

St. Louis

The new St. Louis Office is located at 8001 Clayton Road, St. Louis, Missouri and will be under the direction of Mr. Clarence R. Studer, District Sales Engineer.

Mr. Studer, a graduate of Washington State College, is a Registered Professional Engineer in Missouri for both Electrical and Mechanical Engineering. He has handled the products of Chain Belt Company in the St. Louis area for four years prior to his recent appointment as District Sales Engineer. Earlier experience in the power transmission field includes 19 years with General Electric Company as Application and Sales Engineer.

Jacksonville

The new Jacksonville Office, located at 340 W. Church Street, Jacksonville, Florida, will be under the direction of Mr. David B. Hill.

Mr. Hill graduated from Clemson A & M College with a B. S. degree in Mechanical and Electrical Engineering. Since his first employment as a Conveyor Engineer by Ford Motor Company, he has had over 25 years of experience covering design, installation, service and sales in this and closely related fields. He joined Chain Belt Company in 1937 and was District Sales Engineer in its Chicago and Atlanta Offices prior to his new appointment as District Manager at Jacksonville.

Products

These two new District Offices will sell Rex Cast and Fabricated Steel Power Transmission and Conveyor Chains . . . Baldwin-Rex Power Transmission and Conveyor Roller Chains . . . Rex Conveyors and Conveying Equipment . . . Rex Food Processing and Sanitation Equipment.

C. E. RICH JOINS DAY CO.

C. E. Rich, formerly with Ogilvie Flour Mills Co. Ltd., Montreal, has joined Day Co. of Canada as research director. An expert on milling technology, Mr. Rich functions as engineering consultant both to Day engineers and customers.

As superintendent of production and research at Ogilvie Flour Mills, he had a key part in planning the development of their mammoth new Royal Mill at Montreal.

Prior to joining the Day Company, Mr. Rich has devoted twenty years to the flour milling industry, has received an honorary degree from the University of Saskatchewan and participated in many projects for improving processing technique in all phases of milling.

Mr. Rich left his post with Ogilvie to devote more time to research of milling technology. His association with the Day Company as director of research and delevopment provides millers in Canada and the United States with an excellent source of information on the latest milling methods. Mr. Rich will work with the Day Company engineers to develop practical means for better achieving improved milling procedure.

MINNESOTA LINSEED OPENS NEW PLANT

Formal opening of the new vegetable oil processing plant recently completed has been announced by the Minnesota Linseed Oil Co. The plant, regarded as one of the most modern in operation, is located in Fridley township just north of Minneapolis. Concrete tanks provide storage for 1 million bushels of soybeans or flaxseed and production is rated at 4000 bags of linseed meal per 24-hour day. The extraction building is unique with 38 iron baskets making a circuit of the tower once an hour. The rest of the mill is designed around the 62-foot tower; the baskets loaded with flakes at the top of the tower are sent downward and solvent is sprayed on the basket at the top and drains out of the perforated bottoms. Sixteen screw presses in the preparation building have a scalping capacity of about 330 tons of flaxseed and 240,000 pounds of oil daily.

MOTOR STARTS FIRE

A fire believed to have been started in an electric motor used to operate a grain conveyor caused a $100,000 loss at the Howard Flour & Feed Mill, Central Bridge, N. Y. 200 firemen were needed to fight the blaze.

RICE MILL FIRE

The Northern Rice Milling Co., Gibson Switch, Ark., suffered an estimated loss of $300,000 in the recent fire which burned the mill and elevator. Cause of the fire was due to heated conduits according to reports.

RECENT VISITORS

Ted Badenoch, Hart-Carter Co., Minneapolis

Tom Strid, Strid Grain Co., Green Bay, Wis.

Dave Swan, Dixie Machinery Mfg. Co., St. Louis

Ed Josephson, Schreier Malting Co., Sheboygan, Wis.

Frank Blodgett, Weevil-Cide Co., Kansas City.

Emile Beatty, J. C. Kintz Co., Cedar Rapids, Ia.

NEW KANSAS ELEVATORS

The Salina Terminal Elevator Co. will erect a new 130,000 bushel elevator at Claflin, Kansas, on the site of the old Farmers Elevator which has been used here by the company. The old building will be razed and the new structure will be built by Chalmers and Borton, Hutchinson, Kansas.

A 200,000 bushel addition to the Farmers Grain Co., Haven, Kansas, will also be built by Chalmers & Borton in 1949. Nine new grain tanks will be erected.

LATHROP GRAIN CORP. MOVES

The Lathrop Grain Corp., Kansas City, moved into their new offices at 121 Board of Trade Building. The new offices are the most modern in the building and provide larger space for the Lathrop organization.

Storage facilities are owned and operated at Omaha and Fort Worth with total capacity of more than 2 million bushels. Under lease to other interests is the Lathrop elevator of 1 million bushel capacity at Enid.

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